

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 27, 2023

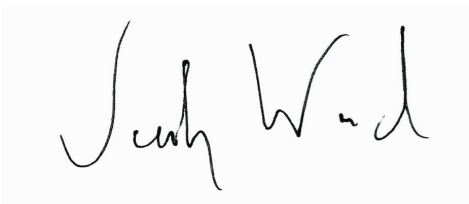
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Derr 21-4 Wellhead

Work Order #2311233

Enclosed are the results of analyses for samples received by Summit Scientific on 11/10/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-FL@4'	2311233-01	Soil	11/10/23 00:00	11/10/23 16:30
SEP02-FL@4'	2311233-02	Soil	11/10/23 00:00	11/10/23 16:30
FLR01@4'	2311233-03	Soil	11/10/23 00:00	11/10/23 16:30
FL01-01@4'	2311233-04	Soil	11/10/23 00:00	11/10/23 16:30
FL01-04@4'	2311233-05	Soil	11/10/23 00:00	11/10/23 16:30
BKG02@4'	2311233-06	Soil	11/10/23 00:00	11/10/23 16:30
BKG01@4'	2311233-07	Soil	11/10/23 00:00	11/10/23 16:30

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page 1 of 1
2311233	

Client: Fremont Environmental		Project Manager: Paul Henehan		Send Invoice To:	
Address: 8305 6th Street		E-Mail: Fremont Distribution List		Company: Noble/Chevron	
City/State/Zip: Wellington, CO, 80549		Project Name: <i>Derr-21-4 Wellhead</i>		Project Name/Location: <i>Derr-21-4 Wellhead</i>	
Phone: 603-477-6907		Project Number:		AFE#: <i>UWRWE-A1987-ABN</i>	
Sampler Name: Aaron Otillar				PO/Billing Codes:	
				Contact: Mike Montoya	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 915	TPH (C6-C36)	PAH	TMB's - 915	Metals (915-1)		SAR, EC, pH, Boron
1	SEPO1-FL04'	11/10/23		2			X			X			X	X	X	X	X		
2	SEPO2-FL04'																		
3	FLR0104'																		
4	FL01-0104'																		
5	FL01-0404'																		
6	BK60104'			1											X	X			
7	BK60204'			1											X	X			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>[Signature]</i> Date/Time: 11/10/23 1945	Received by: <i>Summit North Office</i> Date/Time: 11/10/23 1545	TAT Business Days	Field DO	Notes:
		Same Day	Field EC	
Relinquished by: <i>[Signature]</i> Date/Time: 11/10/23 1630	Received by: <i>[Signature]</i> Date/Time: 11/10/23 1630	1 Day	Field ORP	
		2 Days	Field pH	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____	3 Days	Field Temp.	
Temperature Upon Receipt: <u>8.4</u>	Corrected Temperature: <u>8</u>	Standard	X Field Turb.	
	IR gun #: _____		HNO3 lot #: _____	

S₂

Sample Receipt Checklist

S2 Work Order# 2311233

Client: Fremont

Client Project ID: Derr 21-4 wellhead

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #: _____

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply)

Air

Soil/Solid

Water

Other

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? (1) NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OK
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? (1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No sample jar w labeled BK602 e4
For volatiles in water - is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? (1) Note the type of preservative in the comments column - HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? (1) Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
(1) If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS
Custodian Printed Name

11/21/03
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

SEP01-FL@4'
2311233-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0419	105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.6	101 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

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11/27/23 15:37

SEP01-FL@4'
2311233-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0174	52.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0161	48.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

SEP01-FL@4'
2311233-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.25	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	59.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.41	0.400	"	"	"	"	"	"
Lead	5.86	0.200	"	"	"	"	"	"
Nickel	2.10	0.400	"	"	"	"	"	"
Silver	0.0278	0.0200	"	"	"	"	"	"
Zinc	9.61	0.400	"	"	"	"	"	"
Selenium	0.280	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	218	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	23.4	0.0500	"	"	"	"	"	"	
Sodium	2.65	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0456	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

SEP01-FL@4'
2311233-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.2	%	1	BGK0665	11/17/23	11/17/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.176	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

SEP02-FL@4'
2311233-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0436	109 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0383	95.8 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	11.5	91.9 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

SEP02-FL@4'
2311233-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0170	51.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	50.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

SEP02-FL@4'
2311233-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.68	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	82.6	0.400	"	"	"	"	"	"
Cadmium	0.320	0.200	"	"	"	"	"	"
Copper	3.31	0.400	"	"	"	"	"	"
Lead	6.61	0.200	"	"	"	"	"	"
Nickel	2.54	0.400	"	"	"	"	"	"
Silver	0.0354	0.0200	"	"	"	"	"	"
Zinc	12.5	0.400	"	"	"	"	"	"
Selenium	0.405	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	90.2	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	9.29	0.0500	"	"	"	"	"	"	
Sodium	1.71	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0458	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

SEP02-FL@4'
2311233-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	89.3	%	1	BGK0665	11/17/23	11/17/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.217	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.77		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

FLR01@4'
2311233-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0437	109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0384	96.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	16.6	133 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

FLR01@4'
2311233-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0157	47.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0174	52.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

FLR01@4'
2311233-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.52	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	74.2	0.400	"	"	"	"	"	"
Cadmium	0.233	0.200	"	"	"	"	"	"
Copper	4.12	0.400	"	"	"	"	"	"
Lead	5.57	0.200	"	"	"	"	"	"
Nickel	2.16	0.400	"	"	"	"	"	"
Silver	0.0271	0.0200	"	"	"	"	"	"
Zinc	9.18	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	165	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	8.41	0.0500	"	"	"	"	"	"	
Sodium	4.28	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0881	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

FLR01@4'
2311233-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	94.4	%	1	BGK0665	11/17/23	11/17/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.116	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.65		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

FL01-01@4'
2311233-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0430	108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0376	94.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	13.2	106 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

FL01-01@4'
2311233-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

FL01-01@4'
2311233-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.70	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B	
Barium	65.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.39	0.400	"	"	"	"	"	"	
Lead	4.30	0.200	"	"	"	"	"	"	
Nickel	2.27	0.400	"	"	"	"	"	"	
Silver	0.0277	0.0200	"	"	"	"	"	"	
Zinc	7.85	0.400	"	"	"	"	"	"	
Selenium	0.267	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	182	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	40.0	0.0500	"	"	"	"	"	"	
Sodium	47.9	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.838	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

FL01-01@4'
2311233-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	95.4	%	1	BGK0665	11/17/23	11/17/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.31	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.02		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

FL01-04@4'
2311233-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0449	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	17.0	136 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

FL01-04@4'
2311233-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

FL01-04@4'
2311233-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.33	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	18.2	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.65	0.400	"	"	"	"	"	"
Lead	2.21	0.200	"	"	"	"	"	"
Nickel	1.60	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	5.20	0.400	"	"	"	"	"	"
Selenium	0.716	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.0	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	6.61	0.0500	"	"	"	"	"	"	
Sodium	20.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.04	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

FL01-04@4'
2311233-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	98.4			%	1	BGK0665	11/17/23	11/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.143	0.0100		mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.48			pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

BKG02@4'
2311233-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.53	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B	
Barium	59.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.09	0.400	"	"	"	"	"	"	
Lead	4.19	0.200	"	"	"	"	"	"	
Nickel	2.09	0.400	"	"	"	"	"	"	
Silver	0.0238	0.0200	"	"	"	"	"	"	
Zinc	7.23	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	144	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	37.0	0.0500	"	"	"	"	"	"	
Sodium	58.4	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

BKG02@4'
2311233-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.12	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.9		%	1	BGK0665	11/17/23	11/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.21	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.94		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

BKG01@4'
2311233-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.81	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B	
Barium	61.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.45	0.400	"	"	"	"	"	"	
Lead	4.72	0.200	"	"	"	"	"	"	
Nickel	2.44	0.400	"	"	"	"	"	"	
Silver	0.0269	0.0200	"	"	"	"	"	"	
Zinc	8.27	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	153	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	39.6	0.0500	"	"	"	"	"	"	
Sodium	61.1	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

BKG01@4'
2311233-07 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0		%	1	BGK0665	11/17/23	11/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.24	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.77		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGK0460 - EPA 5030 Soil MS

Blank (BGK0460-BLK1)

Prepared: 11/13/23 Analyzed: 11/14/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0414		"	0.0400		103	50-150			
<i>Surrogate: Toluene-d8</i>	0.0386		"	0.0400		96.5	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0387		"	0.0400		96.7	50-150			

LCS (BGK0460-BS1)

Prepared: 11/13/23 Analyzed: 11/14/23

Benzene	0.0973	0.0020	mg/kg	0.100		97.3	70-130			
Toluene	0.0920	0.0050	"	0.100		92.0	70-130			
Ethylbenzene	0.0873	0.0050	"	0.100		87.3	70-130			
m,p-Xylene	0.173	0.010	"	0.200		86.4	70-130			
o-Xylene	0.0858	0.0050	"	0.100		85.8	70-130			
1,2,4-Trimethylbenzene	0.0855	0.0050	"	0.100		85.5	70-130			
1,3,5-Trimethylbenzene	0.0852	0.0050	"	0.100		85.2	70-130			
Naphthalene	0.0823	0.0038	"	0.100		82.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0436		"	0.0400		109	50-150			
<i>Surrogate: Toluene-d8</i>	0.0408		"	0.0400		102	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0393		"	0.0400		98.3	50-150			

Matrix Spike (BGK0460-MS1)

Source: 2311233-01

Prepared: 11/13/23 Analyzed: 11/14/23

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130			
Toluene	0.0884	0.0050	"	0.100	ND	88.4	70-130			
Ethylbenzene	0.0917	0.0050	"	0.100	ND	91.7	70-130			
m,p-Xylene	0.176	0.010	"	0.200	ND	87.8	70-130			
o-Xylene	0.0871	0.0050	"	0.100	ND	87.1	70-130			
1,2,4-Trimethylbenzene	0.0714	0.0050	"	0.100	ND	71.4	70-130			
1,3,5-Trimethylbenzene	0.0718	0.0050	"	0.100	ND	71.8	70-130			
Naphthalene	0.0768	0.0038	"	0.100	ND	76.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0448		"	0.0400		112	50-150			
<i>Surrogate: Toluene-d8</i>	0.0476		"	0.0400		119	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0447		"	0.0400		112	50-150			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGK0460 - EPA 5030 Soil MS

Matrix Spike Dup (BGK0460-MSD1)	Source: 2311233-01			Prepared: 11/13/23 Analyzed: 11/14/23						
Benzene	0.115	0.0020	mg/kg	0.100	ND	115	70-130	10.2	30	
Toluene	0.102	0.0050	"	0.100	ND	102	70-130	14.3	30	
Ethylbenzene	0.0873	0.0050	"	0.100	ND	87.3	70-130	4.89	30	
m,p-Xylene	0.171	0.010	"	0.200	ND	85.6	70-130	2.56	30	
o-Xylene	0.0855	0.0050	"	0.100	ND	85.5	70-130	1.91	30	
1,2,4-Trimethylbenzene	0.0711	0.0050	"	0.100	ND	71.1	70-130	0.421	30	
1,3,5-Trimethylbenzene	0.0727	0.0050	"	0.100	ND	72.7	70-130	1.25	30	
Naphthalene	0.0820	0.0038	"	0.100	ND	82.0	70-130	6.54	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0468</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0447</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>50-150</i>			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BGK0462 - EPA 3550A

Blank (BGK0462-BLK1)

Prepared: 11/13/23 Analyzed: 11/14/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	13.4		"	12.5		108	30-150			

LCS (BGK0462-BS1)

Prepared: 11/13/23 Analyzed: 11/14/23

C10-C28 (DRO)	388	50	mg/kg	500		77.6	70-130			
Surrogate: <i>o</i> -Terphenyl	15.6		"	12.5		125	30-150			

Matrix Spike (BGK0462-MS1)

Source: 2311233-01

Prepared: 11/13/23 Analyzed: 11/14/23

C10-C28 (DRO)	455	50	mg/kg	500	26.3	85.8	70-130			
Surrogate: <i>o</i> -Terphenyl	15.3		"	12.5		122	30-150			

Matrix Spike Dup (BGK0462-MSD1)

Source: 2311233-01

Prepared: 11/13/23 Analyzed: 11/14/23

C10-C28 (DRO)	466	50	mg/kg	500	26.3	87.9	70-130	2.26	20	
Surrogate: <i>o</i> -Terphenyl	12.8		"	12.5		102	30-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGK0486 - EPA 5030 Soil MS

Blank (BGK0486-BLK1)

Prepared & Analyzed: 11/14/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0372</i>		"	<i>0.0333</i>		<i>112</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0403</i>		"	<i>0.0333</i>		<i>121</i>		<i>40-150</i>		

LCS (BGK0486-BS1)

Prepared & Analyzed: 11/14/23

Acenaphthene	0.0327	0.00500	mg/kg	0.0333	98.1	31-137
Anthracene	0.0325	0.00500	"	0.0333	97.6	30-120
Benzo (a) anthracene	0.0310	0.00500	"	0.0333	93.0	30-120
Benzo (a) pyrene	0.0304	0.00500	"	0.0333	91.1	30-120
Benzo (b) fluoranthene	0.0314	0.00500	"	0.0333	94.2	30-120
Benzo (k) fluoranthene	0.0318	0.00500	"	0.0333	95.5	30-120
Chrysene	0.0326	0.00500	"	0.0333	97.9	30-120
Dibenz (a,h) anthracene	0.0283	0.00500	"	0.0333	85.0	30-120
Fluoranthene	0.0323	0.00500	"	0.0333	96.9	30-120
Fluorene	0.0350	0.00500	"	0.0333	105	30-120
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333	61.6	30-120
Pyrene	0.0323	0.00500	"	0.0333	97.0	35-142
1-Methylnaphthalene	0.0326	0.00500	"	0.0333	97.8	35-142
2-Methylnaphthalene	0.0321	0.00500	"	0.0333	96.2	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0314</i>		"	<i>0.0333</i>	<i>94.3</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0318</i>		"	<i>0.0333</i>	<i>95.3</i>	<i>40-150</i>

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGK0486 - EPA 5030 Soil MS

Matrix Spike (BGK0486-MS1)

Source: 2311216-03

Prepared & Analyzed: 11/14/23

Acenaphthene	0.0190	0.00500	mg/kg	0.0333	ND	57.1	31-137			
Anthracene	0.0168	0.00500	"	0.0333	ND	50.3	30-120			
Benzo (a) anthracene	0.0171	0.00500	"	0.0333	ND	51.2	30-120			
Benzo (a) pyrene	0.0163	0.00500	"	0.0333	ND	49.0	30-120			
Benzo (b) fluoranthene	0.0163	0.00500	"	0.0333	ND	49.0	30-120			
Benzo (k) fluoranthene	0.0151	0.00500	"	0.0333	ND	45.4	30-120			
Chrysene	0.0177	0.00500	"	0.0333	ND	53.1	30-120			
Dibenz (a,h) anthracene	0.0141	0.00500	"	0.0333	ND	42.3	30-120			
Fluoranthene	0.0203	0.00500	"	0.0333	ND	60.8	30-120			
Fluorene	0.0175	0.00500	"	0.0333	ND	52.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0146	0.00500	"	0.0333	ND	43.7	30-120			
Pyrene	0.0185	0.00500	"	0.0333	ND	55.6	35-142			
1-Methylnaphthalene	0.0169	0.00500	"	0.0333	ND	50.7	15-130			
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.4	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0163		"	0.0333		49.0	40-150			
Surrogate: Fluoranthene-d10	0.0162		"	0.0333		48.7	40-150			

Matrix Spike Dup (BGK0486-MSD1)

Source: 2311216-03

Prepared & Analyzed: 11/14/23

Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.6	31-137	23.9	30
Anthracene	0.0202	0.00500	"	0.0333	ND	60.7	30-120	18.7	30
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	ND	62.7	30-120	20.1	30
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	15.2	30
Benzo (b) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.2	30-120	17.2	30
Benzo (k) fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	22.7	30
Chrysene	0.0213	0.00500	"	0.0333	ND	63.8	30-120	18.4	30
Dibenz (a,h) anthracene	0.0161	0.00500	"	0.0333	ND	48.3	30-120	13.3	30
Fluoranthene	0.0221	0.00500	"	0.0333	ND	66.2	30-120	8.49	30
Fluorene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	27.5	30
Indeno (1,2,3-cd) pyrene	0.0177	0.00500	"	0.0333	ND	53.1	30-120	19.4	30
Pyrene	0.0218	0.00500	"	0.0333	ND	65.5	35-142	16.3	30
1-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.8	15-130	22.8	50
2-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.0	15-130	25.2	50
Surrogate: 2-Methylnaphthalene-d10	0.0212		"	0.0333		63.6	40-150		
Surrogate: Fluoranthene-d10	0.0206		"	0.0333		61.8	40-150		

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BGK0618 - EPA 3050B

Blank (BGK0618-BLK1)

Prepared: 11/16/23 Analyzed: 11/17/23

Boron ND 2.00 mg/L

LCS (BGK0618-BS1)

Prepared: 11/16/23 Analyzed: 11/17/23

Boron 5.04 2.00 mg/L 5.00 101 80-120

Duplicate (BGK0618-DUP1)

Source: 2311233-01

Prepared: 11/16/23 Analyzed: 11/17/23

Boron 0.671 2.00 mg/L 0.680 1.33 20

Matrix Spike (BGK0618-MS1)

Source: 2311233-01

Prepared: 11/16/23 Analyzed: 11/17/23

Boron 5.48 2.00 mg/L 5.00 0.680 96.0 75-125

Matrix Spike Dup (BGK0618-MSD1)

Source: 2311233-01

Prepared: 11/16/23 Analyzed: 11/17/23

Boron 5.48 2.00 mg/L 5.00 0.680 96.0 75-125 0.00858 25

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BGK0805 - EPA 3050B

Blank (BGK0805-BLK1)

Prepared: 11/21/23 Analyzed: 11/22/23

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BGK0805-BS1)

Prepared: 11/21/23 Analyzed: 11/22/23

Arsenic	41.2	0.200	mg/kg wet	40.0		103	80-120			
Barium	41.4	0.400	"	40.0		104	80-120			
Cadmium	2.13	0.200	"	2.00		106	80-120			
Copper	39.5	0.400	"	40.0		98.8	80-120			
Lead	20.1	0.200	"	20.0		100	80-120			
Nickel	39.0	0.400	"	40.0		97.6	80-120			
Silver	2.09	0.0200	"	2.00		105	80-120			
Zinc	40.7	0.400	"	40.0		102	80-120			
Selenium	4.35	0.260	"	4.00		109	80-120			

Duplicate (BGK0805-DUP1)

Source: 2311233-01

Prepared: 11/21/23 Analyzed: 11/22/23

Arsenic	1.60	0.200	mg/kg dry	1.25		24.0	20		QR-01
Barium	99.1	0.400	"	59.8		49.4	20		QR-04
Cadmium	0.327	0.200	"	0.185		55.3	20		QR-01
Copper	3.52	0.400	"	2.41		37.3	20		QR-01
Lead	10.3	0.200	"	5.86		55.1	20		QR-04
Nickel	2.93	0.400	"	2.10		32.9	20		QR-01
Silver	0.0515	0.0200	"	0.0278		59.6	20		QR-01
Zinc	13.4	0.400	"	9.61		33.0	20		QR-04
Selenium	0.442	0.260	"	0.280		44.9	20		QR-01

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BGK0805 - EPA 3050B

Matrix Spike (BGK0805-MS1)

Source: 2311233-01

Prepared: 11/21/23 Analyzed: 11/22/23

Arsenic	18.4	0.200	mg/kg dry	46.4	1.25	37.0	75-125				QM-07
Barium	115	0.400	"	46.4	59.8	120	75-125				
Cadmium	2.27	0.200	"	2.32	0.185	90.1	75-125				
Copper	18.9	0.400	"	46.4	2.41	35.5	75-125				QM-07
Lead	24.7	0.200	"	23.2	5.86	81.3	75-125				
Nickel	18.5	0.400	"	46.4	2.10	35.5	75-125				QM-07
Silver	2.02	0.0200	"	2.32	0.0278	85.8	75-125				
Zinc	28.5	0.400	"	46.4	9.61	40.8	75-125				QM-07
Selenium	5.57	0.260	"	4.64	0.280	114	75-125				

Matrix Spike Dup (BGK0805-MSD1)

Source: 2311233-01

Prepared: 11/21/23 Analyzed: 11/22/23

Arsenic	18.3	0.200	mg/kg dry	46.4	1.25	36.7	75-125	0.773	25		QM-07
Barium	125	0.400	"	46.4	59.8	142	75-125	8.36	25		QM-07
Cadmium	2.45	0.200	"	2.32	0.185	97.6	75-125	7.37	25		
Copper	19.1	0.400	"	46.4	2.41	36.0	75-125	1.17	25		QM-07
Lead	26.5	0.200	"	23.2	5.86	89.1	75-125	7.14	25		
Nickel	18.9	0.400	"	46.4	2.10	36.1	75-125	1.67	25		QM-07
Silver	2.16	0.0200	"	2.32	0.0278	91.9	75-125	6.73	25		
Zinc	28.8	0.400	"	46.4	9.61	41.3	75-125	0.844	25		QM-07
Selenium	6.22	0.260	"	4.64	0.280	128	75-125	11.0	25		QM-07

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BGK0662 - 3060A Mod

Blank (BGK0662-BLK1)

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGK0662-BS1)

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent 27.0 0.30 mg/kg wet 25.0 108 80-120

Duplicate (BGK0662-DUP1)

Source: 2311233-01

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGK0662-MS1)

Source: 2311233-01

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent 29.5 0.30 mg/kg dry 29.0 ND 102 75-125

Matrix Spike Dup (BGK0662-MSD1)

Source: 2311233-01

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent 28.8 0.30 mg/kg dry 29.0 ND 99.4 75-125 2.19 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BGK0695 - General Preparation

Blank (BGK0695-BLK1)

Prepared: 11/17/23 Analyzed: 11/22/23

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BGK0695-BS1)

Prepared: 11/17/23 Analyzed: 11/22/23

Calcium	5.42	0.0500	mg/L wet	5.00	108	70-130				
Magnesium	4.77	0.0500	"	5.00	95.4	70-130				
Sodium	4.71	0.0500	"	5.00	94.1	70-130				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGK0665 - General Preparation

Duplicate (BGK0665-DUP1)

Source: 2311233-01

Prepared & Analyzed: 11/17/23

% Solids	87.6		%		86.2			1.52	20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BGK0723 - General Preparation

Blank (BGK0723-BLK1)

Prepared: 11/20/23 Analyzed: 11/21/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGK0723-BS1)

Prepared: 11/20/23 Analyzed: 11/21/23

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105


Duplicate (BGK0723-DUP1)

Source: 2311165-01

Prepared: 11/20/23 Analyzed: 11/21/23

Specific Conductance (EC) 0.363 0.0100 mmhos/cm 0.363 0.00 20

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/27/23 15:37

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGK0724 - General Preparation

LCS (BGK0724-BS1)

Prepared: 11/20/23 Analyzed: 11/21/23

pH	9.17	pH Units	9.18	99.9	95-105
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Duplicate (BGK0724-DUP1)

Source: 2311165-01

Prepared: 11/20/23 Analyzed: 11/21/23

pH	8.60	pH Units	8.60	0.00	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/27/23 15:37

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference